
Introduction

About this document

This document provides installation and acceptance testing procedures for Meridian 1 system options 21A, 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C.

System installation is to be performed by qualified personnel only. To use this document, you should have a basic knowledge of Meridian 1 equipment and operation. (Contact Northern Telecom Training Centers for information on installation courses.) You should also read and fully understand the *Meridian 1 system overview* (553-3001-100) before you install a system.

References

See the *Meridian 1 planning and engineering guide* for:

- *Meridian 1 system overview* (553-3001-100)
- *Meridian 1 installation planning* (553-3001-120)
- *Meridian 1 system engineering* (553-3001-151)
- *Meridian 1 power engineering* (553-3001-152)
- *Spares planning* (553-3001-153)
- *Meridian 1 equipment identification* (553-3001-154)

See the *Meridian 1 installation and maintenance guide* for:

- *Library navigator* (553-3001-000)
- *Circuit card installation and testing* (553-3001-211)
- *Telephone and attendant console installation* (553-3001-215)
- *Meridian 1 general maintenance information* (553-3001-500)

- *Meridian 1 fault clearing* (553-3001-510)
- *Meridian 1 hardware replacement* (553-3001-520)

For information on the MFA150 Modular Front Access Power System, see the following documents:

- *MFA150 Modular Front Access Power System: Description, installation, operation and maintenance manual* (167-9021-104)
- *MFA150 Modular Front Access Power System user guide* (P0730121)

For information on the System 600/48 Power Plant see the following document:

- *Meridian 1 applications—Systems 600/48 Description, Installation, Operation, and Maintenance Manual* (167-9021-111)

For information on the MPP600 Modular Power Plant, see the following documents:

- *MPP600 Modular Power Plant: Description, installation, operation and maintenance manual* (167-9021-105)
- *50-amp Rectifier Expansion Assembly Installation* (P0743512)

For information on the NT6D82 Power System, see the following documents:

- *NT6D82 Power System description, installation, and maintenance* (553-3001-110)
- *Reference manual for NT6D82 Power System* (P0714863)
- *Reference manual for 100A Rectifier* (P0714864)

For information on the QCA13 DC power system, see the following documents:

- *Power Distribution Plant J2412A* (167-2191-200)
- *NT5C03 Switched Mode Rectifier —48V/50A: Description, Maintenance and Ordering Information* (169-2031-200)

See the *Meridian 1 X11 software guide* for:

- *X11 software management* (553-3001-300)
- *X11 features and services*

See the *X11 input/output guide* for a description of all administration programs, maintenance programs, and the *X11 system messages guide* for information about system messages.

Meridian 1 equipment

In Meridian 1 systems, modules are stacked one on top of another to form a column. Each column contains a pedestal, a top cap, and up to four modules that can include the:

- NT5D21 Core/Network Module
required for Options 51C, 61C, and 81C
- NT5K11 Enhanced Existing Peripheral Equipment Module
- NT6D39 CPU/Network Module
required for options 51 and 61
- NT6D60 Core Module
required for option 81
- NT8D11 Common/Peripheral Equipment (CE/PE) Module
required for options 21A, 21, and 21E
- NT8D13 Peripheral Equipment (PE) Module
optional for options 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C
- NT8D34 CPU Module
required for option 71
- NT8D35 Network Module
required for options 71, 81, and 81C, optional for digital trunk interface (DTI)/primary rate interface (PRI) expansion in options 21, 21E, 51, and 61
- NT8D36 InterGroup Module
required for options 71 81, and 81C
- NT8D37 Intelligent Peripheral Equipment (IPE) Module
required for options 51, 51C, 61, 61C, 71, 81, and 81C; optional for options 21 and 21E
- NT8D47 Remote Peripheral Equipment (RPE) Module
optional for options 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C
- NT9D11 Core/Network Module
used for option 61C if NT5D21 is not equipped

In addition, modules that house application specific equipment, such as Meridian Mail and Meridian Link modules, can be included in a column.

Each pedestal (except in option 21A) houses a blower unit, air filter, power distribution unit (PDU), and system monitor.

The top cap provides airflow exits, input/output (I/O) cable access, and overhead cable-rack mounting. Thermal sensor assemblies for the column are attached to a perforated panel, which is placed on top of the highest module in the column, under the top cap.

A system can have one column or multiple columns. For compliance with EMI/RFI standards, spacer kits are provided to interconnect the columns in a multiple-column system.

The procedures in this document apply to the following system options:

- option 21A: single CPU, single module
- options 21 and 21E (21 Enhanced): single CPU
- option 51: single CPU, half network group
- option 51C: enhanced common control complex with single CPU, half network group
- option 61: dual CPU, full network group
- option 61C: enhanced common control complex with dual CPU, full network group
- option 71: dual CPU, multiple network groups
- option 81: enhanced common control complex with dual CPU, multiple network groups
- Option 81C: enhanced common control complex with dual CPU, multiple network groups

All system options are available in both AC- and DC-powered versions (except option 21A, which is available with AC power only).

Meridian 1 system architecture and each type of module are described in *Meridian 1 system overview* (553-3001-100). The components of AC-powered systems, DC-powered systems, and reserve power options for both are described in *Meridian 1 power engineering* (553-3001-152).

Equipment handling precautions

To avoid personal injury and equipment damage, review the following guidelines before handling Meridian 1 equipment.

Unloading equipment

Special ramps, packed inside the pallet holding Column 0, must be used to move the equipment off the pallet. Follow the instructions provided with the ramps.

CAUTION

Never pry up the pedestal to lift the column. This could cause major damage to the pedestal. Manually slide the column down the ramps provided.

Power equipment

There are no user-repairable components in the power system. If a power supply fails, the complete unit must be replaced. Do *not* disassemble a power supply under any circumstances.

WARNING

To avoid the danger of electric shock, be very careful when you work with power equipment and connections. Warning notices are displayed and *must* be heeded.

External power equipment, such as a UPS, power plant, or batteries, may be very heavy and may require special handling procedures and additional personnel for unloading and installation. Also, be aware of weight distribution and keep the equipment room floor from being overly stressed.

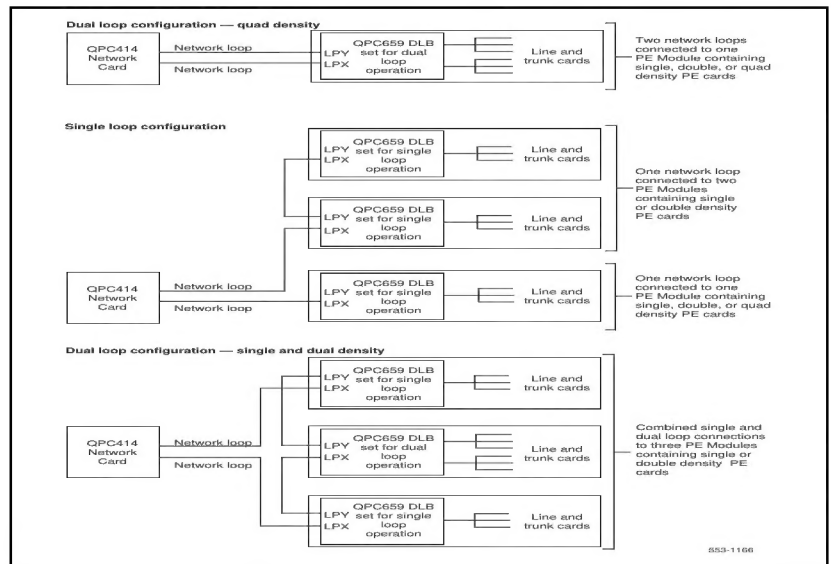
Circuit cards

Handle cards as follows:

- Unpack or handle cards away from electric motors, transformers, or similar machinery.
- Handle cards by the edges only. Do not touch the contacts or components.
- Set cards on a protective antistatic bag. If an antistatic bag is not available, hand-hold the card, or set it in a card cage unseated from the connectors.
- Store cards in protective packing. Do not stack cards on top of each other unless they are packaged.

To avoid card damage from static discharge, wear a properly connected antistatic wrist strap when you work on Meridian 1 equipment. If a wrist strap is not available, regularly touch one of the bare metal strips in the module to discharge static. [Figure 1](#) shows connection points for the wrist strap and the bare metal strips you should touch.

Figure 1
Static discharge points



Data disks

Check the disk identification to make sure it is the correct disk. Compare software options with the data cartridge. Follow these precautions to avoid damaging disks:

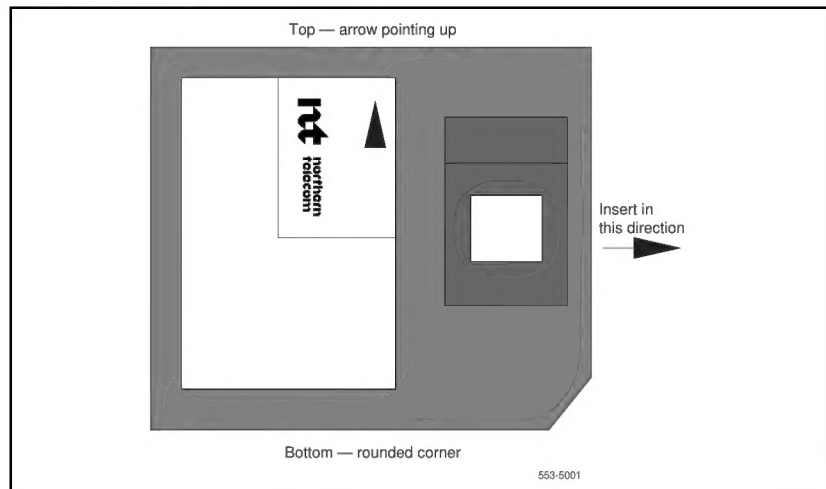
- Handle only the hard surface; never touch the recording surface.
- Keep disks away from strong magnetic fields.
- Avoid exposing disks to extreme heat, rapid changes in temperature, or high humidity.
- Store disks in a suitable container.

To install a disk, make sure the arrow on the label is pointing up and the rounded corner is on the bottom on the right-hand side (see [Figure 2](#)).

CAUTION

The disk drive can be damaged if an upside-down disk is forced into the slot. If there is significant resistance when you try to insert a disk, remove the disk and check the position.

Figure 2
Disk position



Cable routing guidelines

A system layout, preconfigured at the factory, is included in the software box with each system shipment. Before you route cables, refer to the “to-from” cable connections in the system layout. Note that there are a variety of cable lengths. Make sure you install the designated cable for each connection.

Because the cable troughs (see [Figure 3](#)) and spaces on the sides of each module are within the EMI shielding of the system, unshielded cables can be routed in those areas. The corner vertical channels in the rear of the module are outside of the EMI shield. Cables routed in the vertical channels must be shielded, and must enter and exit the EMI-shielded area through I/O panels and adapters.

As space permits, cables can be routed

- horizontally in the cable troughs at the front, rear, and sides of the module

Note: In a DC-powered module, because there is no MPDU, there is room to route cables horizontally from front to rear on the left side (front view) of the module.

- vertically on the sides of the module
- vertically in the corner channels in the rear of the module (shielded cables only)

CAUTION

Cables must be routed as perpendicular as possible to any nearby power cables. Avoid routing cables near power cables if alternate routing is available. (At the rear of the module, cables routed between the I/O panel and the rear cover can be parallel to the power cables because the panel provides EMI shielding.)

Figure 3
Cable routing troughs—front view of module

